

## A New Species of *Goniothalamus* from Peat Swamp Forest in Borneo

By JAMES SINCLAIR

MR. J. A. R. ANDERSON of the Forest Department, Kuching, Sarawak has, on several occasions, sent me duplicates of a *Goniothalamus* from Borneo which he could not match and which he wished to include for publication in his paper, "The Flora of the Peat Swamp Forests of Sarawak and Brunei, including a catalogue of all recorded species of flowering plants, ferns and fern allies." When I visited Sarawak and Brunei last year, July to September 1960, he again reminded me about it and showed me more sheets of it in the Herbarium at Kuching. It has been found in several localities in Sarawak and Brunei and is confined mostly to peat swamp forest or wet forest with a certain amount of peat. Ashton obtained it from the *Shorea albida* swamps at Seria and Bukit Puan in Brunei where there is some sand in the soil as well as peat. I looked for it in these and other localities in Brunei, but unfortunately did not find it myself. I am now describing it as a new species and have named it in honour of J. A. R. Anderson.

***Goniothalamus andersonii* J. Sinclair, sp. nov.—Fig. 1.**

Species affinis *G. tavoyensi* et *G. tapi*; a priore foliis magis coriaceis, nervis pluribus, sepalis obtusis, petalis exterioribus longioribus, stipitibus carpellorum longioribus distinguitur; ab altero ramulis atro-fuscis (non rubro-brunneis nec stramineis), foliis in sicco pallidioribus, carpellis stipitatis recedit.

Arbor 10–15 m. alta. *Cortex* atrofuscus, levis, odoratus. *Ramuli* atro-fusci vel nigrescentes, striati, glabri. *Folia* coriacea vel subcoriacea, elliptico-oblonga vel oblonga, supra brunneo-viridia in sicco, interdum nitida, subtus pallidiora, apice rotundata obtuse apiculata, basi acutiuscula, 12–21 cm. longa, 5–8 cm. lata; costa supra insculpta, subtus elevata; nervi 10–14-jugati, graciles, utrinque elevati, prominuli, nervi secundarii primariis breviores; reticulationes graciles utrinque visibiles; petioli 1.5–2 cm. longi. *Flores* solitarii, axillares vel ex axillis foliorum delapsorum orti. *Pedicelli* tenues, 1 cm. longi. *Sepala* coriacea, semiorbiculata, reticulata, prope basin cordata, immo basi connata, 5 mm. longa, 1 cm. lata. *Petala* flava; exteriora puberula, 4 cm. longa, medio 1 cm. lata, supra medium longe et anguste acuminata, basi truncata; interiora in partibus liberis

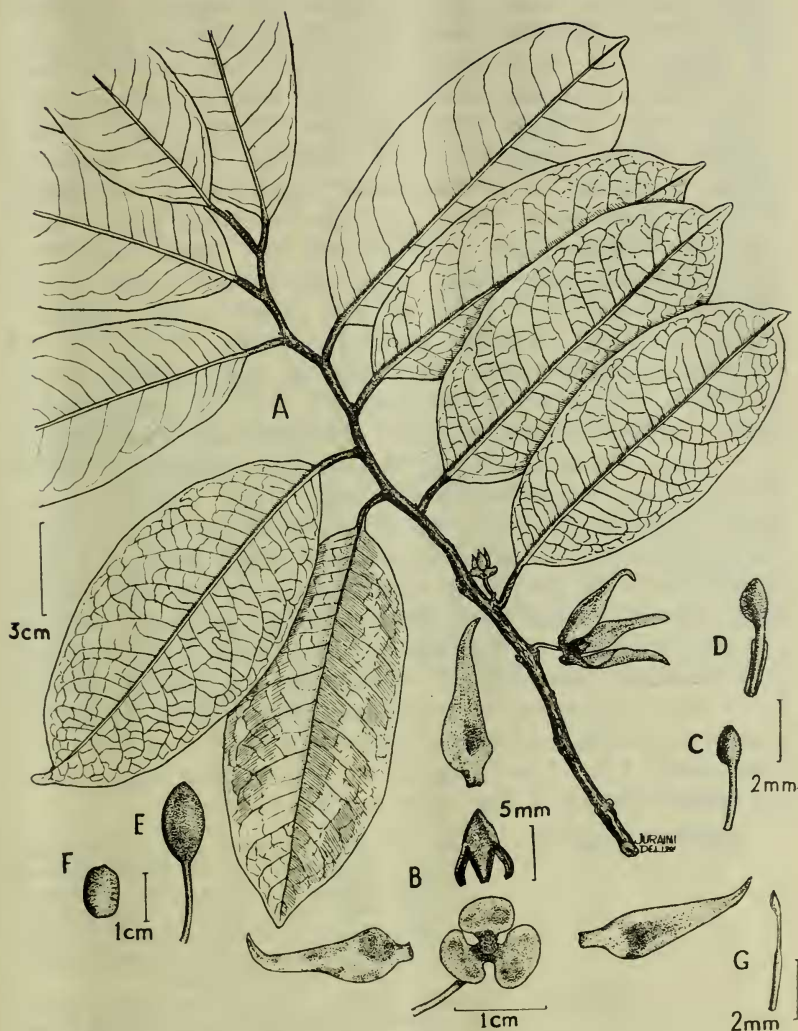


Fig. 1. *Goniothalamus andersonii* J. Sinclair.

A, twig with leaves and flowers. B, dissection of flower to show calyx, outer and inner petals. C, staminode or infertile outer stamen. D, stamen. E, carpel. F, seed. G, ovary with style and stigma. All drawings from Ashton, Smythies & Wood SAR 5901 (SING holotype).

tomentella, intus glabra, mitriformia, apice acuta, 8 mm.—1 cm. longa, 3–4 mm. lata. *Stamina* 2 mm. longa, connectivis tomentellis obtuse apiculatis. *Ovaria* 2.5–3 mm. longa, anguste cylindrica; stigma glabra, infundibuliforme. *Carpella* late elliptica, glabra, 1.5 cm. longa, 1 cm. lata; stipites 1.3–1.5 cm. longi, tenues, 2 mm. crassi. *Semen* 1, nitidum badium, 1.2 cm. longum, 8 mm. latum.

Tree 10–15 m. high. *Bark* very dark brown, smooth, sweet-scented. *Twigs* dark brown or blackish, striate, glabrous. *Leaves* coriaceous or sub-coriaceous, elliptic-oblong or oblong, brownish green above when dry, also sometimes glossy, paler and dull beneath, apex rounded and then bluntly apiculate, base somewhat acute; midrib sunk and grooved above, raised beneath; nerves 10–14 pairs, slender, raised on both surfaces, slightly prominent, secondary nerves present but shorter than the primary; reticulations fine, but visible on both surfaces; length 12–21 cm.; breadth 5–8 cm.; petiole 1.5–2 cm. long. *Flowers* solitary, axillary or from the axils of fallen leaves. *Pedicels* thin, 1 cm. long. *Sepals* coriaceous, semi-circular, reticulate, cordate near the base, connate at the very base, 5 mm. long and 1 cm. broad. *Petals* bright yellow, the outer puberulous, 4 cm. long, 1 cm. broad at the middle, narrowed and drawn out into a long acumen above the middle, truncate at the base; the inner tomentulose on the exposed parts, glabrous inside, mitriform, acute at the apex, 8 mm.—1 cm. long and 3–4 mm. broad. *Stamens* 2 mm. long, the connectives obtusely apiculate and tomentulose. *Ovaries* 2.5–3 mm. long, narrowly cylindrical; stigmas glabrous, funnel-shaped. *Carpels* broadly elliptic, glabrous, 1.5 cm. long and 1 cm. broad; stalks 1.3–1.5 cm. long, slender, 2 mm. thick. *Seed* 1, shining, chestnut brown, 1.2 cm. long and 8 mm. broad.

## BORNEO SARAWAK:

3rd Division:—Sungei Pasir, Kut Siong P.F., *Anderson SAR 125* (SAR); Batang Igan, Tanjong Kelapu, Sibu, *Anderson SAR 689* (SAR, SING); Naman F.R., Sibu, *Sanusi b. Tahir SAR 5062* (SAR); Daro F.R., Surong Irit, Binatang, *Sanusi b. Tahir SAR 5236* (SAR).

## BRUNEI:

Bukit Puan, *Ashton SAR 7864* (SAR, SING); Seria, *Ashton, Smythies & Wood SAR 5901* (SAR, SING); Badas, Research Plot 9/2, *Hassan SAR 2851* (SAR, SING).

## DISTRIBUTION:

## TYPE MATERIAL:

Sarawak and Brunei in peat swamp forest. *Ashton, Smythies & Wood SAR 5901* (SAR, SING holotype).

VERNACULAR NAMES: *Selukai* (Iban); *pudin* (Milanau); *serbah semangun* (Malay).

## USES:

The bark is used as a repellent against mosquitoes.

A tree of the peat swamp forest with blackish twigs, rather coriaceous, elliptic-oblong, finely veined leaves, tomentulose, slightly apiculate anther connectives and 1-seeded, stalked, elliptic carpels. Because of the apiculate connectives and the somewhat similar leaves, it would appear to be related to *G. tavoyensis* and *tapis* and nearest to the former. It differs from it, however, in the more coriaceous leaves with more veins, the obtuse semi-orbicular sepals, the longer outer petals and the longer carpel stalks. It differs from *tapis* in the blackish twigs, the colour of the leaves on drying, the less sharply apiculate connectives and in the stalked carpels. In *tapis* the young twigs are reddish brown, the older pale grey or straw-coloured while the leaves dry a dull, dark brown above and a medium brown beneath and the carpels are sessile. There is also some superficial resemblance to the Ceylon *G. hookeri*, a species with somewhat similar though broader leaves and black twigs, but that plant would fall in another group because of its convex or flat-topped anther connectives. Its acute sepals and smaller flowers would also distinguish it from *andersonii*.

*G. andersonii*, apart from its affinities with these three above-mentioned species, will not readily be mistaken for any of them. It is more likely to be confused, especially in the herbarium with sterile material of *G. malayanus*, a species of similar habitat in peat swamp forest in Borneo. *G. malayanus* however, is a shrub and has narrower, glossy leaves and pale straw-coloured twigs. The stamen connectives are flat-topped or slightly convex and the carpels oblong with 2-5 seeds.